Tuberculosis in Indiana, 2003

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Wednesday, March 24 is World TB Day. It was on this day in 1882 that German microbiologist Robert Koch discovered *Mycobacterium tuberculosis*, the bacteria that causes TB. Tuberculosis continues to be one of the deadliest diseases in the world, with 8 million new cases and 3 million deaths reported worldwide each year. Approximately 95 percent of TB cases occur in developing countries where there are few resources to insure adequate treatment and where HIV infection is common. TB is the number one killer of AIDS patients in world.

Despite a dramatic overall decline in TB cases since the mid-1950s, Indiana cases have increased in each of the last two years while almost every other state continues to experience a decline. During 2003, 143 new cases of TB were reported to the Indiana State Department of Health (ISDH). Tuberculosis was reported by 40 (44%) of the 92 counties. The five counties that reported five or more cases accounted for 63% of the total. Long-term trends and new cases over the past 10 years are shown in figures 1 and 2 respectively.

Figure 1.

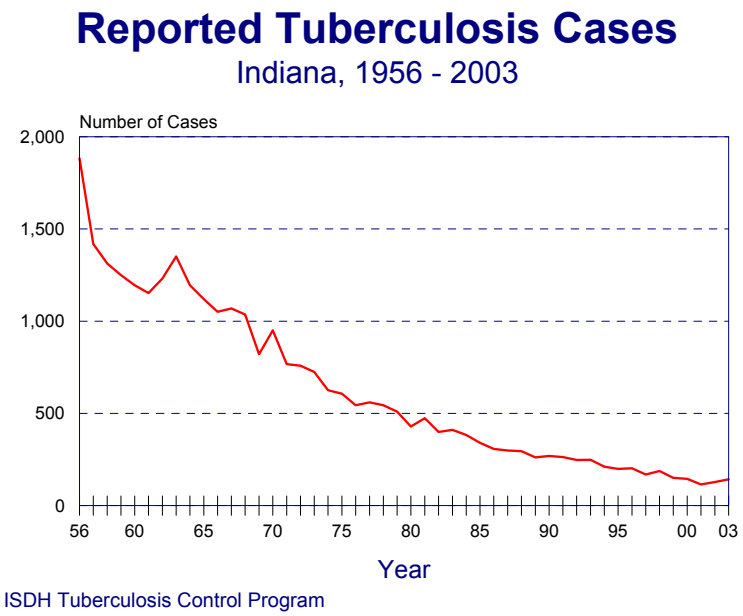
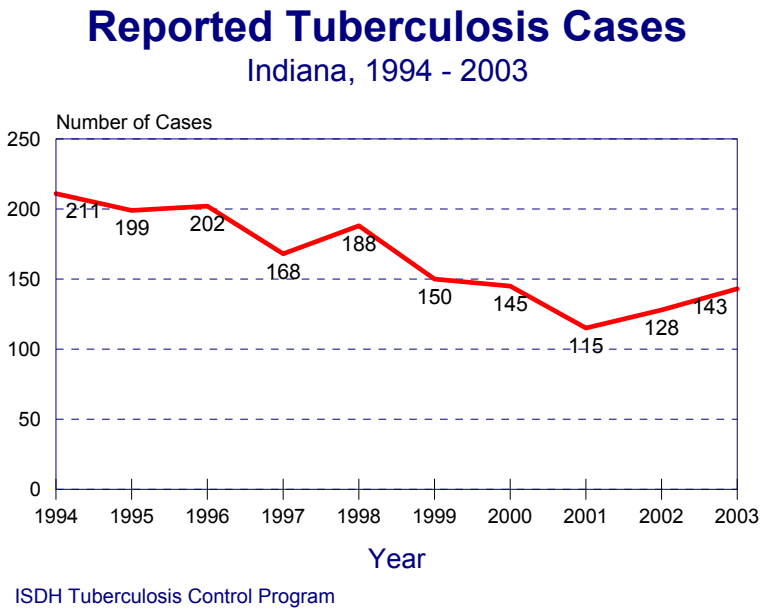


Figure 2.



The majority of TB cases develop in persons who were infected in the past. Approximately 10 percent of persons infected with TB will develop active disease at some point in their lives, but it is not possible to predict who will become ill or when. Other factors also contributed to the increase.

- **Continued transmission among social contacts**. Allen County experienced an increase in new cases, with 16 new cases reported in 2003, compared to 10 in 2002. Six of these cases had epidemiological links to a single source case in 2001. The situation has been complicated by the reluctance of the patients to name all their contacts. The ones who were identified either failed to complete preventive therapy or refused treatment. Drug use was common in this group of cases.

- **An increase in the number of clinical cases of TB disease.** Not all cases of TB are diagnosed based on laboratory confirmation. Fifteen percent of the new cases in 2003 did not have laboratory confirmation, but met the Centers for Disease Control's clinical case definition for tuberculosis. The number of clinical cases in Marion County increased from 5 in 2002 to 16 in 2003. This indicates that these patients are being diagnosed sooner rather than later.

- **An increase in the number of new cases among the foreign-born** Marion County's cases increased from 31 in 2002 to 51 in 2003. This was due primarily due to a 117% increase in the number of foreign-born cases and an increase in the number of cases among the elderly. None of these cases was outbreak-related. The foreign-born population continues to make up one-third of all the state's new cases. Figure 3 shows the percentage of TB cases among the foreign-born versus U.S.-born. Figure 4 shows where the majority of the foreign-born came from.

Figure 3.

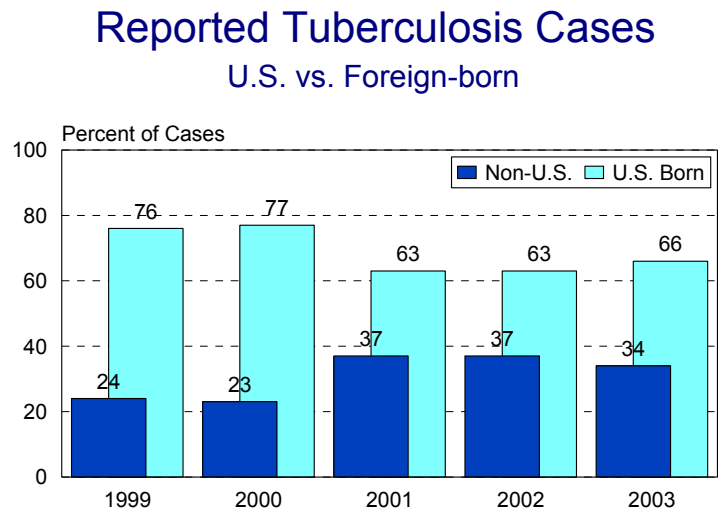


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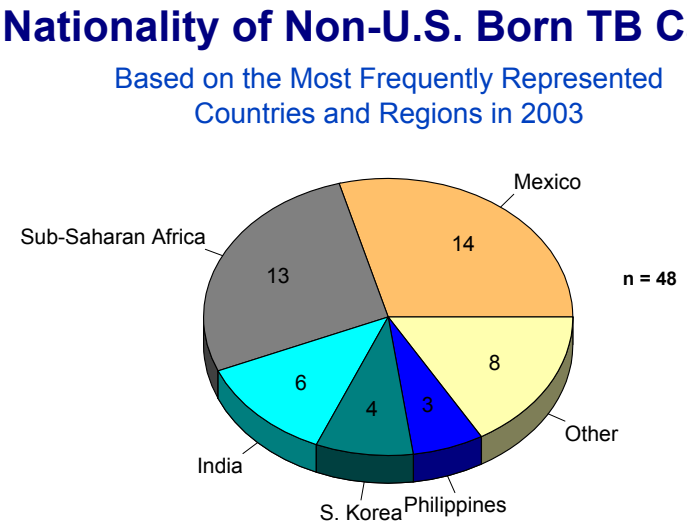
Figure 4.



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Maintaining the decline in new TB cases hinges on the continued implementation of TB control core activities. The most important activity is the prompt identification and treatment of new TB cases and completion of therapy, followed by the identification and treatment of infected contacts and targeted testing and treatment of other persons likely to be infected. The last group includes persons born in countries where TB is common and persons belonging to socio-economic groups who tend to live and socialize in settings where TB is transmitted. This group includes injection drug users, other substance abusers, and the homeless.

Finally, these activities are incorporated into a client-centered patient management system in which the local health department provides case management and physicians in private practice provide medical care. The ISDH TB Drug Program provides drugs at no cost to the patient. The state Mycobacteriology Laboratory provides specimen processing, culture identification and drug susceptibility testing services at no cost to the patient or referring client laboratories. This integrated approach, combined with the use of directly observed therapy, helps to ensure that all TB patients are being managed appropriately and will complete treatment.

References:

1. Indiana State Department of Health Tuberculosis Information Management System database.

2. Institute of Medicine. *Ending Neglect: The Elimination of Tuberculosis in the United States.* 2000.